

Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Currently Amended) A communication method for use in a communication system utilizing a plurality of bands, the communication method comprising the steps of:
mapping a bit stream in a data stream to the plurality of bands, respectively, in a first band order wherein the first band order indicates a mapping pattern for mapping the bit stream to the respective plurality of bands;

mapping the bit stream to the same plurality of bands, as the plurality of bands used to map the bit stream in the first band order, in a second band order, wherein the second band order indicates a mapping pattern that is different from the mapping pattern of the first band order; and

transmitting the bit stream mapped to the plurality of bands respectively in the first band order and the bit stream mapped to the plurality of bands respectively in the second band order without changing the plurality of bands used to transmit the bit stream,

wherein the transmitting step includes simultaneously transmitting the bit stream in the first band order and the bit stream in the second band order for receipt by a receiver.

2. (Previously Presented) The communication method of claim 1, wherein the method is for use in an Ultra Wideband (UWB) communication system which utilizes a plurality of UWB multi-bands and wherein the transmitting step comprises the steps of:

transmitting the bit stream in the first band order via a first UWB multi-band of the plurality of UWB multi-bands and the bit stream in the second band order via a second UWB multi-band of the plurality of UWB multi-bands.

3. (Previously Presented) The communication method of claim 1, further comprising the step of:

receiving a received error indicator corresponding to the bit stream in the first band order, wherein the bit stream is mapped to the plurality of bands in the second band order and transmitted in the second band order only responsive to receipt of the received error indicator.

4-5. (Cancelled)

6. (Previously Presented) The communication method of claim 1, wherein the bit stream is mapped to the plurality of bands in the first band order in a frame time and wherein the step of mapping the bit stream to the plurality of bands in the second band order comprises the steps of:

mapping the bit stream to the plurality of bands in the second band order in a subsequent frame time to the frame time in which the bit stream is mapped to the plurality of bands in the first band order.

7. (Currently Amended) A communication method for use in a communication system including a transmitter utilizing a plurality of bands, the transmitter capable of mapping: (1) an input bit stream to the plurality of bands in a first band order wherein the first band order indicates a mapping pattern for mapping the bit stream to the respective plurality of bands and (2) the input bit stream to the same plurality of bands, as the plurality of bands used to map the input bit stream in the first band order, in a second band order, wherein the second band order indicates a mapping pattern that is different from the mapping pattern of the first band order without changing the plurality of bands, the communication method comprising the steps of:

receiving, by a receiver, a bit stream in the plurality of bands during a first transmission and an other bit stream in the same plurality of bands during a second transmission, each of the received bit streams corresponding to the input bit stream;

demapping the received bit stream according to the first band order pattern to obtain a first band bit stream corresponding to the input bit stream;

demapping the other bit stream according to the second band order pattern to obtain a second band bit stream corresponding to the input bit stream; and

processing the first and second band bit streams to yield the input bit stream,

wherein the first transmission of the bit stream and the second transmission of the other bit stream are simultaneously transmitted for receipt by the receiver.

8. (Previously Presented) The communication method of claim 7, wherein the first and second band bit streams each include symbols and wherein the processing step comprises the step of:

combining symbols in the first band bit stream with corresponding symbols in the second band bit stream; and

processing the combined symbols to yield the input bit stream.

9. (Previously Presented) The communication method of claim 7, wherein the transmitter is configured to map the input bit stream to the plurality of bands in the second band order responsive to an error detection signal and wherein the method further comprises the steps of:

detecting errors in the first transmission; and
generating the error detection signal for receipt by the transmitter responsive to the detected errors.

10. (Currently Amended) A communication apparatus for use in a communication system utilizing a plurality of bands, the communication apparatus comprising:

a mapper configured to map a bit stream to the plurality of bands, respectively, in a first band order wherein the first band order indicates a mapping pattern for mapping the bit stream to the respective plurality of bands and to map the bit stream to the same plurality of bands, as the plurality of bands used to map the bit stream in the first band order, in a second band order wherein the second band order indicates a mapping pattern that is different from the mapping pattern of the first band order; and

a transmitter coupled to the mapper, the transmitter configured to transmit the bit stream mapped to the plurality of bands respectively in the first band order and the bit stream mapped to the plurality of bands respectively in the second band order without changing the plurality of bands used to transmit the bit stream.

wherein the transmitter is configured to simultaneously transmit the bit stream mapped in the first band order and the bit stream mapped in the second band order for receipt by a receiver.

11. (Previously Presented) The communication apparatus of claim 10, wherein the transmitter is an Ultra Wideband (UWB) multi-band transmitter.

12. (Previously Presented) The communication apparatus of claim 10, wherein the mapper is further configured to receive a received error indicator corresponding to the bit stream mapped to the plurality of bands in the first band order and wherein the mapper only maps the bit stream to the plurality of bands in the second band order for transmission by the transmitter responsive to receipt of the received error indicator.

13. (Cancelled)

14. (Previously Presented) The communication apparatus of claim 10, wherein the mapper is configured to map the bit stream to the plurality of bands in the first band order in a frame time and to map the bit stream to the same plurality of bands in the second band order in a subsequent frame time to the frame time in which the bit stream is mapped to the first band order.

15. (Currently Amended) A communication apparatus for use in a communication system including a transmitter utilizing a plurality of bands, the transmitter capable of mapping: (1) an input bit stream to the plurality of bands in a first band order wherein the first band order indicates a mapping pattern for mapping the bit pattern to the respective plurality of bands and (2) the input bit stream to the same plurality of bands, as the plurality of bands used to map the input bit stream in the first band order, in a second band order, wherein the second band order indicates a mapping pattern that is different than the mapping pattern of the first band order without changing the plurality of bands, the communication apparatus comprising:

a receiver configured to receive a bit stream of a first transmission corresponding to the input bit stream in the plurality of bands ~~during a first transmission~~ and an other bits stream of a second transmission corresponding to the input bit stream in the same plurality of bands ~~during a second transmission~~;

a demapper coupled to the receiver, the demapper configured to demap the bit stream according to the first band order mapping pattern to obtain a first band bit stream corresponding to the input bit stream and to demap the other bit stream according to the second band order mapping pattern to obtain a second band bit stream corresponding to the first band bit stream; and

a processor coupled to the demapper, the processor configured to process the first and second band bit streams to yield the input bit stream,

wherein the transmitter transmits the first transmission of the bit stream and the second transmission of the other bit stream simultaneously for receipt by the receiver.

16. (Previously Presented) The communication apparatus of claim 15, wherein the first and second input bit streams each include symbols and wherein the processor is further configured to combine symbols in the first input bit stream with corresponding symbols in the

second input bit stream and to process the first and second input bit streams to yield the input bit stream.

17. (Previously Presented) The communication apparatus of claim 16, wherein the transmitter maps the portion of the input bit stream to the plurality of bands in the second band order responsive to an error detection signal and wherein the processor is further configured to detect errors in the first transmission and to generate the error detection signal for receipt by the transmitter responsive to the detected error.

18-27. (Cancelled)

28. (Previously Presented) The method of claim 1, wherein the bit stream is mapped to each of the plurality of bands in the first band order and is mapped to each of the same plurality of bands in the second band order.

29-30. (Cancelled)

31. (Previously Presented) The method of claim 1, wherein the bit stream is mapped to the plurality of bands in the first band order and is mapped to the same plurality of bands in the second band order without removing one or more bands.

32-33. (Cancelled)

34. (Previously Presented) The method of claim 1, wherein, in the transmitting step, a first frequency band for transmitting the bit stream in the first band order and a second frequency band for transmitting the bit stream in the second band order are the same frequency band.

35-36. (Cancelled)